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EXAMINER	
THANGAVELU, KANDASAMY	

ART UNIT	PAPER NUMBER
2123	8

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/675,257	GASTIGER ET AL.	
	Examiner	Art Unit	
	Kandasamy Thangavelu	2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-51 of the application have been examined.

Foreign Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application 9912312 filed in France on October 1, 1999. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. Acknowledgment is made of the information disclosure statements filed on September 29, 2000 together with copies of the patents and papers. The patents and papers have been considered in reviewing the claims.

Drawings

4. The drawings submitted on 29 September 2000 are accepted.

Claim Objections

5. The following is a quotation of 37 C.F.R § 1.75 (d)(1):

> The claim or claims must conform to the invention as set forth in the remainder of the specification and terms and phrases in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description.

6. Claim 21 is objected to because of the following informalities:

Claim 21, which is a terminal device claim for producing a diagram of a gas installation, refers to:

means of communication ...

means of storage ... and

means of display ....

The use of "means of communication ..., means of storage ... and means of display" appears to be incorrect and it appears it should be "means for communication ..., means for storage ... and means for display ...".

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 recites the limitation "Device according to claim 19". There is insufficient antecedent basis for this limitation in the claim. Claim 19 refers to "Process for producing an installation" and not a device. The Examiner has interpreted it as "Process according to claim 19". It is incorrect to use "means for ..." in Claim 24, as claim 24 refers to Claim 19 which is a process claim. The correct reference should be "steps for ...".

Claim 25 recites the limitation "Device according to claim 24". There is insufficient antecedent basis for this limitation in the claim. Claim 24 refers to "Device according to claim 19" but Claim 19 refers to "Process for producing an installation" and not a device. The Examiner has interpreted it as "Process according to claim 24". It is incorrect to use "means for ..." in Claim 25, as claim 25 refers to Claim 19 which is a process claim. The correct reference should be "steps for ...".

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claims 1, 2-5, 9, 10, 19, 20, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Norman et al. (NO)** (U.S. Patent 5, 808, 905) in view of **Bresie et al. (BR)** (U.S. Patent 4,380,242), and further in view of **Jacobs et al. (JA)** (U.S. Patent 5,364,007) and **Lundberg (LU)** (U.S. Patent Application 2001/0003247).

10.1 Claims 1 and 10 are directed to:

1. Process for producing a diagram of an installation using apparatuses supplied with gas.
2. Databases comprising for each apparatus, data on flow rate, nature, purity of the gas supplying the apparatus and the supply pressure of the gas.
3. Selection for each apparatus a value and a limit of duration or frequency of use.
4. Calculating for each apparatus, the consumption or the limit consumption according to utilization or flow rate.
5. Calculation for each gas and each gas purity, the total consumption for all apparatuses.
6. Proposing for each gas and gas purity, a packaging according to consumptions and technical constraints on storage and delivery.
14. Producing a diagram or graphical representation as a function of the data.
14a. Graphical representation of the installation comprises the apparatuses and the gas sources to which they are connected.

Claim 2 is directed to producing the data for preparing the diagram of the installation using apparatuses supplied with gas. Claims 3-5 are directed to using the data in the database. Claim 9 is a combination of claims 2 and 1. Claim 19 is directed to producing the data for preparing the diagram (graphical representation) of the installation and then producing the installation. Claims 20 and 22 are directed to a device for producing the diagram of the installation comprising the means for producing the various steps in the preparation of the diagram.

NO teaches method and apparatus for designing a distribution system for a building. Specifically, as per claim 1, **NO** teaches a process for producing a diagram of an installation using apparatuses supplied with gas (CL1, L16-19; CL1, L22-27; CL2, L42-46; CL3, L12-13); and

databases for each apparatus and the installation (CL2, L61-67);

producing a diagram or graphical representation as a function of the data (CL2, L48-63; Cl3, L12-13); and

graphical representation of the installation comprises the apparatuses and the sources to which they are connected (CL2, L48-63; Cl3, L12-13).

NO does not expressly teach databases comprising for each apparatus data on flow rate and the supply pressure of the gas. **BR** teaches databases comprising for each apparatus data on flow rate (CL2, L23-26; CLl2, L42-54) and the supply pressure of the gas (CL3, L12-19; CL6, L55 to CL7, L16), as the gas demand (flow rate) can vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand (CL2, L23-26); and the pressure of gas supplied to the user facility is controlled resulting in different pressure at the user

facility than at the supply terminal and the pressure is usually kept at an acceptable level at the user facility (CL 6, L55-56; CL7, L3-4 & L9-11). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **BR** that included databases comprising for each apparatus data on flow rate and the supply pressure of the gas, as the gas demand (flow rate) could vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand; and the pressure of gas supplied to the user facility would be controlled resulting in different pressure at the user facility than at the supply terminal and the pressure would be usually kept at an acceptable level at the user facility.

NO does not expressly teach databases comprising for each apparatus data on nature and purity of the gas supplying the apparatus. **JA** teaches databases comprising for each apparatus data on nature (CL1, L6-8; Abstract, L4-6; CL3, L41-49; CL3, L54-56; CL8, L22-37) and purity of the gas supplying the apparatus (CL3, L57-60), as the purpose for which the gas is used determines the nature of the gas, such as inert gas is used to reduce the solder defects and need for flex in the heating chambers of the soldering of electronic components (CL1, L6-8; CL3, 44-48); and the purpose of the use of the gas determines the required purity (CL3, 44-48). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **JA** that included databases comprising for each apparatus data on nature and purity of the gas supplying the apparatus, as the purpose for which the gas was used would determine the nature of the gas, such as inert gas would be used to reduce the solder defects and need for flex in the heating chambers of the soldering of electronic components; and the purpose of the use of the gas would determine the required purity.

NO does not expressly teach selection for each apparatus a value and a limit of duration or frequency of use; calculating for each apparatus, the consumption or the limit consumption according to utilization or flow rate; calculation for each gas and each gas purity, the total consumption for all apparatuses; and proposing for each gas and gas purity, a packaging according to consumptions and technical constraints on storage and delivery. **BR** teaches selection for each apparatus a value and a limit of duration or frequency of use(Cl2, L23-26); calculating for each apparatus, the consumption or the limit consumption according to utilization or flow rat (Cl2, L42-51); calculation for each gas, the total consumption for all apparatuses(Cl2, L42-51); and proposing for each gas, a packaging according to consumptions and technical constraints on storage and delivery (Cl2, L45-54), as the gas demand at each apparatus (flow rate) can vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand (CL2, L23-26). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **BR** that included selection for each apparatus a value and a limit of duration or frequency of use; calculating for each apparatus, the consumption or the limit consumption according to utilization or flow rate; calculation for each gas, the total consumption for all apparatuses; and proposing for each gas, a packaging according to consumptions and technical constraints on storage and delivery, as the gas demand at each apparatus (flow rate) could vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand.

NO does not expressly teach calculation for each gas purity, the total consumption for all apparatuses. **JA** teaches databases comprising for each apparatus data on purity of the gas supplying the apparatus and calculation for each gas purity, the total consumption for all

apparatuses (CL3, L57-60), as the purpose of the use of the gas determines the required gas purity and total consumption at that purity (CL3, 44-48). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **JA** that included calculation for each gas purity, the total consumption for all apparatuses, as the purpose of the use of the gas would determine the required gas purity and the total consumption at that purity.

NO does not expressly teach proposing for each gas and gas purity, a packaging according to consumptions and technical constraints. **LU** teaches proposing for each gas and gas purity, a packaging according to consumptions and technical constraints (Page 2, Para 0014), as that will separate the gas packaging based on tolerance of gas composition and purity (Page2, Para 2). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **LU** that included proposing for each gas and gas purity, a packaging according to consumptions and technical constraints, as that would separate the gas packaging based on tolerance of gas composition and purity.

NO does not expressly teach that graphical representation of the installation comprises the apparatuses and the gas sources to which they are connected. **BR** teaches that graphical representation of the installation comprises the apparatuses and the gas sources to which they are connected (CL3, L12-19; CL6, L55 to CL7, L16), because as per **NO**, that will facilitate layout of the complete distribution system needed to provide for efficient design, installation and operation; the graphical representation and its hard copy could be used for constructing the designed system (CL2, L42-50). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **BR** that

included graphical representation of the installation comprising the apparatuses and the gas sources to which they are connected, as that would facilitate layout of the complete distribution system needed to provide for efficient design, installation and operation; the graphical representation and its hard copy could be used for constructing the designed system.

10.2 As per Claims 21 and 42, Claims 21 and 42 are directed to:

23. Terminal device for producing a diagram of a gas installation comprising at least one apparatus, supplied with gas.
24. Communication means between the terminal device and the database.
25. Means for supplying the terminal device with user data on a used apparatus.
26. Storage means communicating with the supplying means for storing the user data.
27. Display means communicating with storage means for displaying data supplied by the database and the total consumption for each gas.
2. Databases comprising for each apparatus, data on flow rate, nature, purity of the gas supplying the apparatus and the supply pressure of the gas.
4. Calculating for each apparatus, the consumption or the limit consumption according to utilization or flow rate.
5. Calculation for each gas and each gas purity, the total consumption for all apparatuses.
7. Graphical representation of the installation comprises the apparatuses and the gas sources to which they are connected.

NO teaches terminal device for producing a diagram of a gas installation comprising at least one apparatus, supplied with gas;

communication means between the terminal device and the database;

means for supplying the terminal device with user data on a used apparatus;

storage means communicating with the supplying means for storing the user data;

display means communicating with storage means for displaying data supplied by the database (CL1, L16-19; CL1, L22-27; CL2, L42-46; CL3, L12-13; CL4, L6-10);

databases for each apparatus and the installation (CL2, L61-67); and

graphical representation of the installation comprises the apparatuses and the sources to which they are connected (CL2, L48-63; Cl3, L12-13).

NO does not expressly teach display means displaying the total consumption for each gas **BR** teaches display means displaying the total consumption for each gas (CL2, L23-26; CLl2, L42-54), as the gas demand (flow rate) can vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand (CL2, L23-26). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the terminal device of **NO** with the terminal device of **BR** that included display means displaying the total consumption for each gas, as the gas demand (flow rate) could vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand.

NO does not expressly teach databases comprising for each apparatus data on flow rate and the supply pressure of the gas. **BR** teaches databases comprising for each apparatus data on flow rate (CL2, L23-26; CLl2, L42-54) and the supply pressure of the gas (CL3, L12-19; CL6, L55 to CL7, L16), as the gas demand (flow rate) can vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand (CL2, L23-26); and the pressure of gas supplied to the user facility is controlled resulting in different pressure at the user facility than at the supply terminal and the pressure is usually kept at an acceptable level at the user facility (CL 6, L55-56; CL7, L3-4 & L9-11). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **BR** that included databases comprising for each apparatus data on flow rate and the supply pressure of the gas, as the gas demand (flow rate) could vary from hour to hour and day to day,

and the distribution technique must be able to meet the varying demand; and the pressure of gas supplied to the user facility would be controlled resulting in different pressure at the user facility than at the supply terminal and the pressure would be usually kept at an acceptable level at the user facility.

NO does not expressly teach databases comprising for each apparatus data on nature and purity of the gas supplying the apparatus. **JA** teaches databases comprising for each apparatus data on nature (CL1, L6-8; Abstract, L4-6; CL3, L41-49; CL3, L54-56; CL8, L22-37) and purity of the gas supplying the apparatus (CL3, L57-60), as the purpose for which the gas is used determines the nature of the gas, such as inert gas is used to reduce the solder defects and need for flex in the heating chambers of the soldering of electronic components (CL1, L6-8; CL3, 44-48); and the purpose of the use of the gas determines the required purity (CL3, 44-48). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **JA** that included databases comprising for each apparatus data on nature and purity of the gas supplying the apparatus, as the purpose for which the gas was used would determine the nature of the gas, such as inert gas would be used to reduce the solder defects and need for flex in the heating chambers of the soldering of electronic components; and the purpose of the use of the gas would determine the required purity.

NO does not expressly teach selection for each apparatus a value and a limit of duration or frequency of use; calculating for each apparatus, the consumption or the limit consumption according to utilization or flow rate; and calculation for each gas and each gas purity, the total consumption for all apparatuses. **BR** teaches selection for each apparatus a value and a limit of duration or frequency of use(Cl2, L23-26); calculating for each apparatus, the consumption or

the limit consumption according to utilization or flow rat (Cl2, L42-51); and calculation for each gas, the total consumption for all apparatuses(Cl2, L42-51), as the gas demand at each apparatus (flow rate) can vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand (CL2, L23-26). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **BR** that included selection for each apparatus a value and a limit of duration or frequency of use; calculating for each apparatus, the consumption or the limit consumption according to utilization or flow rate; and calculation for each gas, the total consumption for all apparatuses, as the gas demand at each apparatus (flow rate) could vary from hour to hour and day to day, and the distribution technique must be able to meet the varying demand.

NO does not expressly teach calculation for each gas purity, the total consumption for all apparatuses. **JA** teaches databases comprising for each apparatus data on purity of the gas supplying the apparatus and calculation for each gas purity, the total consumption for all apparatuses (CL3, L57-60), as the purpose of the use of the gas determines the required gas purity and total consumption at that purity (CL3, 44-48). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **JA** that included calculation for each gas purity, the total consumption for all apparatuses, as the purpose of the use of the gas would determine the required gas purity and the total consumption at that purity.

NO does not expressly teach that graphical representation of the installation comprises the apparatuses and the gas sources to which they are connected. **BR** teaches that graphical representation of the installation comprises the apparatuses and the gas sources to which they are

connected (CL3, L12-19; CL6, L55 to CL7, L16), because as per **NO**, that will facilitate layout of the complete distribution system needed to provide for efficient design, installation and operation; the graphical representation and its hard copy could be used for constructing the designed system (CL2, L42-50). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **BR** that included graphical representation of the installation comprising the apparatuses and the gas sources to which they are connected, as that would facilitate layout of the complete distribution system needed to provide for efficient design, installation and operation; the graphical representation and its hard copy could be used for constructing the designed system.

10.3 As per Claims 29-32, **NO, BR, JA** and **LU** teach the process of claim 1, the data of Claim 2, the device of claim 20 and the terminal device of claim 21. Claims 29-32 are directed to:

28. Storing the databases in a central computer.
29. Computer program implementing the process.
30. Data carrier comprising data in coded form for implementing the process
31. Software product for implementing the process

NO teaches storing the databases in a central computer;

computer program implementing the process;

data carrier comprising data in coded form for implementing the process;

software product for implementing the process (CL1, L16-19; CL1, L22-27; CL2, L42-46; CL3, L12-13; CL4, L6-10

).

11. Claims 6-8, 11-13, 23, 33 and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Norman et al. (NO)** (U.S. Patent 5, 808, 905) in view of **Bresie et al. (BR)** (U.S. Patent 4,380,242), **Jacobs et al. (JA)** (U.S. Patent 5,364,007) and **Lundberg (LU)** (U.S. Patent Application 2001/0003247), and further in view of **Thomas et al. (TH)** (U.S. Patent 6,219,046) and **Muro et al. (MU)** (U.S. Patent 5,828,377).

11.1 As per Claims 6-8 and 33, **NO, BR, JA** and **LU** teach the process of claim 1 and the data of Claim 2. Claims 6-8 and 33 are directed to:

7. Database comprising data on gas installation equipment.
8. Searching for each packaging and each apparatus to connect the packaging to the apparatus.
9. Searching for the high pressure section associated with each gas packaging.
10. Searching for the low pressure section associated with each apparatus supplied with that gas.
11. Display and visualization showing the storage or packaging of the gas and the equipment necessary for the functioning of this storage.
13. Display and visualization showing the connections to be made between the outlet of the storage or the packaging of the gas and the apparatus supplied with that gas.

NO teaches database comprising data on gas installation equipment;

searching for each packaging and each apparatus connecting the packaging to the apparatus (Cl2, L61-67; CL3, L12-13); and

display and visualization showing the storage or packaging and the equipment necessary for the functioning of this storage and the connections to be made between the outlet of the storage or the packaging of the fluid and the apparatus supplied with that fluid (CL2, L48-53; CL3, L12-13; CL3, L21-24; CL4, L6-10).

NO does not expressly teach database comprising data on gas installation equipment; searching for the high pressure section associated with each gas packaging; and searching for the low pressure section associated with each apparatus supplied with that gas. **BR** teaches database comprising data on gas installation equipment (CL3, L12-24; CL6, L28-37); searching for the high pressure section associated with each gas packaging (CL2, L31-37); searching for the low pressure section associated with each apparatus supplied with that gas (CL3, L12-19; CL6, L55 to CL7, L16), as the user facility is equipped with proper arrangement of components to assure proper functioning of the distribution system (CL3, L13-15); the gas is shipped to the facility using high pressure technique and stored in high pressure vessels (CL 2, L36-37; Cl6, L55-59); and the pressure of the gas supplied to the user equipments is regulated resulting in different pressures between the pressure vessel and user equipment (CL6, L55-56; CL7, L3-4). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **BR** that included database comprising data on gas installation equipment; searching for the high pressure section associated with each gas packaging; and searching for the low pressure section associated with each apparatus supplied with that gas, the user facility would be equipped with proper arrangement of components to assure proper functioning of the distribution system; the gas would be shipped to the facility using high pressure technique and stored in high pressure vessels; and the pressure of the gas supplied to the user equipments would be regulated resulting in different pressures between the pressure vessel and user equipment.

NO does not expressly teach searching for each packaging and each apparatus connecting the packaging to the apparatus; and searching for the high pressure section associated with each gas packaging. **LU** teaches searching for each packaging and each apparatus connecting the packaging to the apparatus; and searching for the high pressure section associated with each gas packaging (Page 2, Para 0014), as that will separate the gas packaging based on tolerance of gas composition and purity (Page2, Para 2). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **LU** that included searching for each packaging and each apparatus connecting the packaging to the apparatus; and searching for the high pressure section associated with each gas packaging, as that would separate the gas packaging based on tolerance of gas composition and purity.

NO does not expressly teach display and visualization showing the storage or packaging of the gas and the equipment necessary for the functioning of this storage; display and visualization showing the connections to be made between the outlet of the storage or the packaging of the gas and the apparatus supplied with that gas. **TH** teaches display and visualization showing the storage or packaging of the gas and the equipment necessary for the functioning of this storage; and display and visualization showing the connections to be made between the outlet of the storage or the packaging of the gas and the apparatus supplied with that gas (Abstract, L1-11), as that will provide graphical representation of a plurality of components of the distribution system using three dimensional display (Abstract, L1-11); and as per MU, the three-dimensional display of the gas supply distribution systems have advanced expressive ability enabling advanced utilization of the display information (CL1, L22-27). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the

process of **NO** with the process of **TH** that included display and visualization showing the storage or packaging of the gas and the equipment necessary for the functioning of this storage; and display and visualization showing the connections to be made between the outlet of the storage or the packaging of the gas and the apparatus supplied with that gas, as that would provide graphical representation of a plurality of components of the distribution system using three dimensional display; and the three-dimensional display of the gas supply distribution systems would have advanced expressive ability enabling advanced utilization of the display information.

11.2 As per Claims 11-13, 23 and 35-37, **NO, BR, JA** and **LU** teach the process of claims 9 and 10 and the device of Claim 20. Claims 11-13, 23 and 35-37 are directed to:

14b. Graphical representation selected from among several possible graphical representations.
15. Graphical representation is three dimensional, representing the ductings connecting the apparatuses to the gas sources.
16. Graphical representations represent the apparatuses, the gas sources and the equipment for connecting the apparatuses to the gas sources.

NO teaches graphical representation selected from hard copy of the design for use in constructing the designed system; graphical representations represent the apparatuses, the sources and the equipment for connecting the apparatuses to the sources (CL2, L48-53; CL3, L12-13; CL3, L21-24; CL4, L6-10 CL1, L22-27).

NO does not expressly teach graphical representation selected from among several possible graphical representations; graphical representation is three dimensional, representing the

ductings connecting the apparatuses to the gas sources; and graphical representations represent the apparatuses, the gas sources and the equipment for connecting the apparatuses to the gas sources. **TH** teaches graphical representation selected from among several possible graphical representations; graphical representation is three dimensional, representing the ductings connecting the apparatuses to the gas sources; and graphical representations represent the apparatuses, the gas sources and the equipment for connecting the apparatuses to the gas sources (Abstract, L1-11), as that will provide graphical representation of a plurality of components of the distribution system using three dimensional display (Abstract, L1-11); and as per **MU**, the three-dimensional display of the gas supply distribution systems have advanced expressive ability enabling advanced utilization of the display information (CL1, L22-27). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process and device of **NO** with the process and device of **TH** that included graphical representation selected from among several possible graphical representations; graphical representation is three dimensional, representing the ductings connecting the apparatuses to the gas sources; and graphical representations represent the apparatuses, the gas sources and the equipment for connecting the apparatuses to the gas sources, as that would provide graphical representation of a plurality of components of the distribution system using three dimensional display; and the three-dimensional display of the gas supply distribution systems would have advanced expressive ability enabling advanced utilization of the display information.

12. Claims 14, 24, 38, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Norman et al. (NO)** (U.S. Patent 5, 808, 905) in view of **Bresie et al. (BR)** (U.S. Patent

4,380,242), **Jacobs et al. (JA)** (U.S. Patent 5,364,007) and **Lundberg (LU)** (U.S. Patent Application 2001/0003247), and further in view of **Patten et al. (PA)** (U.S. Patent 6,612,186).

12.1 As per Claims 14, 24, 38, 43 and 44, **NO, BR, JA** and **LU** teach the process of claims 1 and 19, the data of Claim 2, the device of claim 20 and the terminal device of claim 21. Claims 14, 24, 38, 43 and 44 are directed to:

17. When one of the gas is a mixture of a balanced gas and a first mixed gas, selection of the desired quantitative composition of the gas to be mixed in the mixture.
18. For each mixture, selection of the preparation tolerances and analysis uncertainties.
18a. The indication, for the quantitative composition, of the preparation tolerance and analysis uncertainty.

NO does not expressly teach when one of the gas is a mixture of a balanced gas and a first mixed gas, selection of the desired quantitative composition of the gas to be mixed in the mixture; for each mixture, selection of the preparation tolerances and analysis uncertainties and the indication, for the quantitative composition, of the preparation tolerance and analysis uncertainty. **PA** teaches when one of the gas is a mixture of a balanced gas and a first mixed gas, selection of the desired quantitative composition of the gas to be mixed in the mixture; for each mixture, selection of the preparation tolerances and analysis uncertainties and the indication, for the quantitative composition, of the preparation tolerance and analysis uncertainty (CL1, L13-18; CLl, L24-30; CL1, L43-58), as it is desirable to know the fractional breakdown of a gas stream in the transportation and delivery of the gas, as the heating value and other properties of the gas vary significantly depending on the gas composition(CL1, L53-5814). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **PA** that included when one of the gas was a mixture of a

balanced gas and a first mixed gas, selection of the desired quantitative composition of the gas to be mixed in the mixture; for each mixture, selection of the preparation tolerances and analysis uncertainties and the indication, for the quantitative composition, of the preparation tolerance and analysis uncertainty, as it would be desirable to know the fractional breakdown of a gas stream in the transportation and delivery of the gas, as the heating value and other properties of the gas vary significantly depending on the gas composition.

13. Claims 15 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Norman et al. (NO)** (U.S. Patent 5, 808, 905) in view of **Bresie et al. (BR)** (U.S. Patent 4,380,242), **Jacobs et al. (JA)** (U.S. Patent 5,364,007) and **Lundberg (LU)** (U.S. Patent Application 2001/0003247), and further in view of **Patten et al. (PA)** (U.S. Patent 6,612,186) and **Fisher et al. (FI)** (U.S. Patent 5,920,069).

13.1 As per Claims 15 and 25, **NO, BR, JA** and **LU** teach the process of claims 1 and 19. Claims 15 and 25 are directed to:

> 19. Calculating a linear regression for the different mixtures and different quantitative compositions.
> 19a. Displaying a linear regression line for a given apparatus.

NO does not expressly teach calculating a linear regression for the different mixtures and different quantitative compositions and displaying a linear regression line for a given apparatus. **FI** teaches calculating a linear regression for the different mixtures and different quantitative compositions (CL1, L11-15; CL2, L54-65; CL8, L46-60, Fig. 9); and displaying a linear regression line for a given apparatus (Fig. 9; CL10, L25-39), as the linear regression and least

squares techniques are better suited to predict the composition in the presence of nonlinearities (CL2, L62-65); and the display of the linear regression enables the identification of the determined concentration of the composition in easily understandable manner (CL 10, L33-35). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **FI** that included calculating a linear regression for the different mixtures and different quantitative compositions and displaying a linear regression line for a given apparatus, as the linear regression and least squares techniques would be better suited to predict the composition in the presence of nonlinearities; and the display of the linear regression would enable the identification of the determined concentration of the composition in easily understandable manner.

14. Claims 16-18, 26-28, 39-41 and 45-47, are rejected under 35 U.S.C. 103(a) as being unpatentable over **Norman et al. (NO)** (U.S. Patent 5, 808, 905) in view of **Bresie et al. (BR)** (U.S. Patent 4,380,242), **Jacobs et al. (JA)** (U.S. Patent 5,364,007) and **Lundberg (LU)** (U.S. Patent Application 2001/0003247), and further in view of **Fisher et al. (FI)** (U.S. Patent 5,920,069).

14.1 As per Claims 16-18, 26-28, 39-41 and 45-47, **NO, BR, JA** and **LU** teach the process of claim 1, the data of claim 2, the device of claim 20 and the terminal device of claim 21. Claims 16-18, 26-28, 39-41 and 45-47 are directed to:

20. Database comprises for an apparatus, data on the nature of the mixture with which it can be calibrated and the frequency of calibration of the apparatus.
21. Display on the screen, for an apparatus data on the gas to be used for that apparatus.

22. Display on the screen for a gas, the total consumption for that gas for all of the apparatuses supplied by that gas.

NO teaches database comprises for an apparatus (CL2, L61-67; CL3, L21-24).

NO does not expressly teach display on the screen, for an apparatus data on the gas to be used for that apparatus; and display on the screen for a gas, the total consumption for that gas for all of the apparatuses supplied by that gas. **LU** teaches display on the screen, for an apparatus data on the gas to be used for that apparatus; and display on the screen for a gas, the total consumption for that gas for all of the apparatuses supplied by that gas, as the display enables the identification of the gas to be used for that apparatus and the total consumption of that gas in human readable and easily understandable manner (CL 10, L33-35). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process of **NO** with the process of **FI** that included displaying on the screen, for an apparatus data on the gas to be used for that apparatus; and displaying on the screen for a gas, the total consumption for that gas for all of the apparatuses supplied by that gas, as the display would enable the identification of the gas to be used for that apparatus and the total consumption of that gas in human readable and easily understandable manner.

NO does not expressly teach that database comprises for an apparatus, data on the nature of the mixture with which it can be calibrated and the frequency of calibration of the apparatus. **FI** teaches that database comprises for an apparatus, data on the nature of the mixture with which it can be calibrated and the frequency of calibration of the apparatus (CL3, L16-24), as the results of the calibration are used to predict the component concentrations in the unknown

compositions (CL9, L11-14); and to display the identification of the components and their concentrations in the composition (CL 10, L33-35). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the process and device of **NO** with the process and device **FI** that included database comprising for an apparatus, data on the nature of the mixture with which it could be calibrated and the frequency of calibration of the apparatus, as the results of the calibration would be used to predict the component concentrations in the unknown compositions and to display the identification of the components and their concentrations in the composition.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 703-305-0043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska, can be reached on (703) 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9600.

K. Thangavelu
Art Unit 2123
April 2, 2004